

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 4. (Canceled)

5. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure including therein at least one silicon oxide film and one silicon nitride film, the method comprising characterized in that forming said silicon oxide film is formed by a process comprising the steps of:

supplying a gas containing oxygen and a gas predominantly of Kr into a processing chamber, and

exciting plasma in said processing chamber by a microwave to form said silicon oxide film on a (111) oriented surface of said first electrode.

6. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure in which a first silicon nitride film, a first silicon oxide film, a second silicon nitride film and a second silicon oxide film are stacked consecutively, said first electrode having a polysilicon surface, the method comprising characterized in that forming said first and second silicon oxide films are formed by a process comprising the steps of:

introducing a gas containing oxygen and a gas predominantly of Kr into a processing chamber, and

exciting plasma in said processing chamber by a microwave to form said first silicon oxide film on said first silicon nitride film and to form said second oxide film on said second silicon nitride film.

7. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure in which a first silicon oxide film, a silicon nitride film and a second silicon oxide film are stacked consecutively, said first electrode having a polysilicon surface, the method comprising ~~characterized in that forming~~ said first and second silicon oxide films ~~are formed~~ by a process comprising ~~the steps of~~:

introducing a gas containing oxygen and a gas predominantly of Kr into a processing chamber, and

exciting plasma in said processing chamber by a microwave to form said first silicon oxide film on a (111) oriented surface of said first electrode and to form said second silicon oxide film on said silicon nitride.

8. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with a inter-electrode insulation interposed therebetween, said inter-electrode insulation film having a two-layer structure in which a silicon oxide film and a silicon nitride film are stacked consecutively, said first electrode having a polysilicon surface, the method comprising ~~characterized in that forming~~ said silicon oxide film ~~are formed~~ by a process comprising ~~the steps of~~:

introducing a gas containing oxygen and a gas predominantly of Kr into a processing chamber, and

exciting plasma in said processing chamber by a microwave.

9. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure including at least one silicon nitride film,

the method comprising ~~characterized in that forming~~ said silicon oxide film ~~is formed~~ by a process comprising ~~the step of~~:

exposing a silicon oxide film deposited on said at least one silicon nitride film by a CVD process to atomic state oxygen O* formed by microwave excitation of plasma in a mixed gas of an oxygen-containing gas and an inert gas predominantly of a Kr gas.

10. (Currently Amended) A fabrication process of a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure in which a first silicon nitride film, a first silicon oxide film, a second silicon nitride film and a second silicon oxide film are stacked consecutively, said first electrode having a polysilicon surface, the method comprising ~~characterized in that forming~~ said first and second silicon oxide films ~~are formed~~ by a process comprising ~~the step of~~:

exposing a silicon oxide film deposited by a CVD process to atomic state oxygen O* formed by exciting plasma in a mixed gas of a gas containing oxygen and a gas predominantly of a Kr gas, by a microwave.

11. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure in which a first silicon oxide film, a silicon nitride film and a second silicon oxide film are stacked consecutively, said first electrode having a polysilicon surface [[:]] , the method comprising ~~characterized in that forming~~ said second silicon oxide film ~~is formed~~ by a process comprising ~~the step of~~:

exposing a silicon oxide film deposited by a CVD process to atomic state oxygen O* formed by exciting plasma in a mixed gas of a gas containing oxygen and a gas predominantly of a Kr gas by a microwave.

12. – 13. (Canceled)

14. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode insulation film interposed therebetween, said inter-electrode insulation film having a stacked structure in which a first silicon oxide film, a silicon nitride film and a second silicon oxide film are stacked consecutively, said first electrode having a polysilicon surface [[:]] , the method comprising ~~characterized in that forming~~ said silicon oxide films ~~are formed~~ by a process comprising ~~the step of:~~

exposing a silicon oxide film deposited by a CVD process to atomic state oxygen O* formed by exciting plasma in a mixed gas of a gas containing oxygen and a gas predominantly of a Kr gas by a microwave.

15. – 19. (Canceled)

20. (Currently Amended) A method of fabricating a flash memory device, said flash memory device comprising a silicon substrate, a first electrode of polysilicon formed on said silicon substrate with an insulation film interposed therebetween, and a second electrode formed on said first electrode with an inter-electrode oxide film interposed therebetween, the method comprising ~~characterized on that forming~~ said inter-electrode oxide film ~~is formed~~ by a process comprising ~~the steps of:~~

depositing a polysilicon film on said silicon substrate as said first electrode; and

exposing a (111) oriented surface of said polysilicon film to atomic state oxygen O* formed by exciting plasma in a mixed gas of a gas containing oxygen and an inert gas predominantly of a Kr gas by a microwave to form said inter-electrode oxide film.

21. – 51. (Canceled)